

# **Pro Series**

4x8ft Wall Mounted Shelf



# Warning: Excessive weight hazard!

Use two or more people to move, assemble, or install Wall Mounted Shelf to avoid back or other injury. Do not leave children unattended near Wall Mounted Shelf. High risk of items falling if Wall Mounted Shelf is installed incorrectly: must be securely installed to avoid serious injury. For assistance, call 1.877.306.8930; e-mail at info@newageproducts. com.



### **ATTENTION:**

Is your Wall Mounted Shelf damaged? Need help or spare parts? For fastest service, contact NewAge Products at 1-877-306-8930; or support@newageproducts.com. Do not return to the retailer.

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# SAFETY WARNING PLEASE READ THIS FIRST

- 1. All Wall Mounted Shelf units have a rated load capacity of 600 pounds, evenly distributed, using 3" lag bolts anchored into solid wood studs or 3" concrete anchors into solid concrete supports capable of supporting such a load.
- 2. Each Wall Mounted Shelf utility hook can hold a maximum of 50lbs. Weight of utility hook storage must be included in the maximum load of 600lbs for the overhead rack.
- 3. Do not load more than 600lbs onto a Wall Mounted Shelf. Live loads (people,pets, etc.) may weigh less than the rated weight capacity, however will exert force on the rack beyond it's rated capacity. As such, do not stand, jump or hang from your Wall Mounted Shelf.
- 4. Wall Mounted Shelf units must be installed into structurally sound overhead/wall joists or supports. NewAge Products Inc. make no claim to the capacity or strength of the structure to which the units are mounted.
- 5. NewAge Products Inc. cannot be held liable for structure failure, or damage or injury resulting from structural failure.
- 6. Always inspect the structure of the ceiling and wall to ensure there are suitable supports.
- 7. The Wall Mounted Shelf is designed for installation into wooden joists/studs and solid concrete. Do not attempt mounting to steel beams.
- 8. Ensure all weight is distributed evenly on the rack. Place heavier objects near the perimeter frame and cross supports with lighter objects in the center.
- 9. Do not jump or climb on your Wall Mounted Shelf.
- 10. Do not lean a ladder against the Wall Mounted Shelf.
- 11. Routinely inspect your system to ensure all components are fastened correctly

# **Manufacturer Warranty Limited Lifetime**

When this product is installed, operated and maintained according to the instructions attached to or furnished with the product, NewAge Products Inc. will replace the defective product or parts if the part fails as a result of defective materials or workmanship for the Lifetime of the product.

#### **NEWAGE PRODUCTS INC. WILL NOT PAY FOR:**

- 1. Service calls to correct the installation of any NewAge products or to instruct you how to use or install them.
- 2. Damage resulting from improper handling, or products damaged by accident, misuse, abuse, fire, flood, improper installation, acts of God, neglect, corrosion, modification or mishandling.
- 3. Products damaged by improperly loading beyond the specified maximum weight capacity outlined in the instructions provided with the product.
- 4. Repairs or replacement when your product is used in other than normal, single-family household use, such as a commercial environment, or handled in anyway inconsistent with the installation instructions included with the product.
- 5. Cosmetic damage, including scratches, dings, dents or cracks in paint that do not affect the structural or functional capability of the product.
- 6. Surfaces damaged due to chemical interaction resulting in corrosion of paint or metal.
- 7. Replacement parts for NewAge products outside Canada and the United States.
- 8. Loss of product contents due to theft, fire, flood, accident or acts of God.
- 9. Shipping or freight fees to deliver replacement products or to return defective products.
- 10. Any labor costs during the limited warranty period.

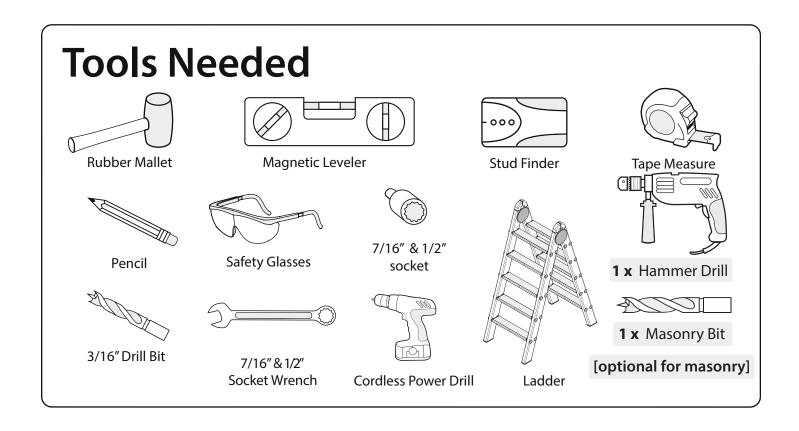


#### **DISCLAIMER OF IMPLIED WARRANTIES; LIMITATION OF REMEDIES**

IMPLIED WARRANTIES, INCLUDING TO THE EXTENT APPLICABLE WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE EXCLUDED TO THE EXTENT LEGALLY PERMISSIBLE. ANY IMPLIED WARRANTIES THAT MAY BE IMPOSED BY LAW ARE LIMITED TO ONE YEAR, OR THE SHORTEST PERIOD ALLOWED BY LAW. SOME STATES AND PROVINCES DO NOT ALLOW LIMITATIONS OR EXCLUSIONS ON HOW LONG AN IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS LASTS, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE OR PROVINCE TO PROVINCE

# Unpacking

- Begin by placing the package on a covered flat surface.
- Remove all cardboard, packaging material and clear plastic bags.
- Dispose / recycle all packaging materials.
- Verify all the contents in the box and gather the required tools. See "Tools Needed", and "Included Quantities" list.

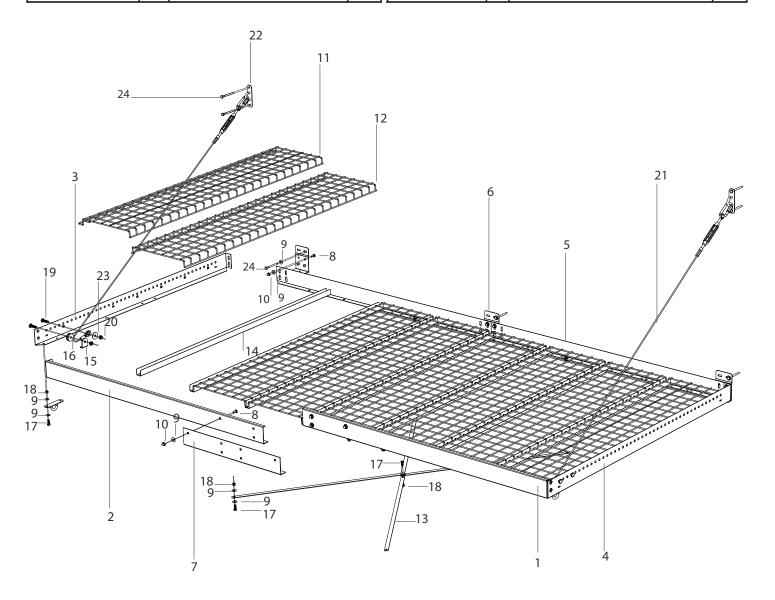


# **Included Quantities**

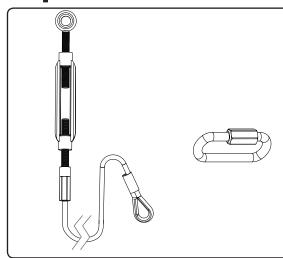
### **4x8ft Pro Series Wall Mounted Shelf**

Part Number		DESCRIPTION	QTY.	
WSH-01A-01-XX		4x8ft Pro Series Wall Mounted Shelf	1	
WSH-01.001A-01-XX	1	Front 'c' channel - RHS	1	
WSH-01.002A-01-XX	2	Front 'c' channel - LHS	1	
WSH-01.003A-01-XX	3	4ft Side Beam - LHS	1	
WSH-01.004A-01-XX	4	4ft Side Beam - RHS	1	
WSH-01.005A-01-XX	5	Back Beam	2	
WSH-01.006A-01-XX	6	Back Hanging Bracket	3	
WSH-01.007A-01-XX	7	Front L Joining Bracket	1	
H00001A-01	8	1/4-20x0.625in Carriage Bolt	12	
H00002A-01	9	1/4in Flat Washer	31	
H00003A-01	10	1/4-20 Acorn Nut	12	
WSH-01.008A-01-XX	11	4ft Finishing Grid Section	2	
WSH-01.009A-01-XX	12	4ft Middle Grid Section	6	
WSH-01.010A-01-XX	13	4ft Cross Supports	4	
WSH-01.011A-01-XX	14	4ft 'U' Shaped Grid Supports	7	
WSH-01.012A-01-XX	15	Pulley Cable Cap	2	
WSH-01.013A-01	16	Pulley	2	

Part Number		DESCRIPTION			
H00004A-01 <b>17</b>		1/4-20x0.75in Hex Bolt	9		
H00005A-01	18	1/4-20 Lock Nut	9		
H00006A-01	19	5/16-18x1.25in Hex Bolt	4		
H00007A-01	20	5/16-18 Lock Nut	4		
WSH-01.014A-01	21	4ft Wire Cable Asssembly	2		
WSH-01.014.01A-01		4ft Wire Cable	2		
WSH-01.014.02A-01		Aluminium Sleeve	2		
WSH-01.014.03A-01		Capel	2		
WSH-01.014.04A-01		Cable Joint			
WSH-01.014.05A-01		Turnbuckle Body	2		
WSH-01.014.06A-01		Turnbuckle Top Connector	2		
WSH-01.014.07A-01		Quick Link Connector	2		
WSH-01.014.08A-01		Quick Link Connector - Closing/ Opening Cylinder			
WSH-01.015A-01	22	Pad Eye Plates			
H00008A-01	23	5/16in Flat Washer			
H00009A-01	24	1/4 x 3in Lag Screw			
H00010A-01	25	Concrete Anchors			



# **Spare Parts**

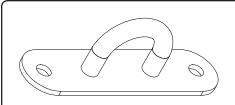


#### **SKU 40480**

Part #: WSH-01.014A-01

**Cable Assembly** 

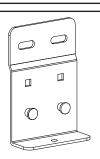
- 4ft Cable Assembly 4mm cable Turnbuckle C-Shaped Clamp Capel
- Quick Link Connector



**SKU 40482** 

Part #: WSH-01.015A-01

**Pad Eye Plates** 



**SKU 40484** 

Part #: WSH-01.006A-01-BS **Black - Back Hanging Brackets** 

**SKU 40485** 

Part #: WSH-01.006A-01-WH **White-Back Hanging Brackets** 



Carriage Bolt



Flat Washer (1/4'')



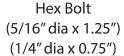
**Acorn Nut** (1/4'')





Flat Washer







Lock Nut (5/16'')(1/4'')(5/16'')







 $(M6 \times 3")$ 

Lag Screw (1/4" dia x 3")



Pulley

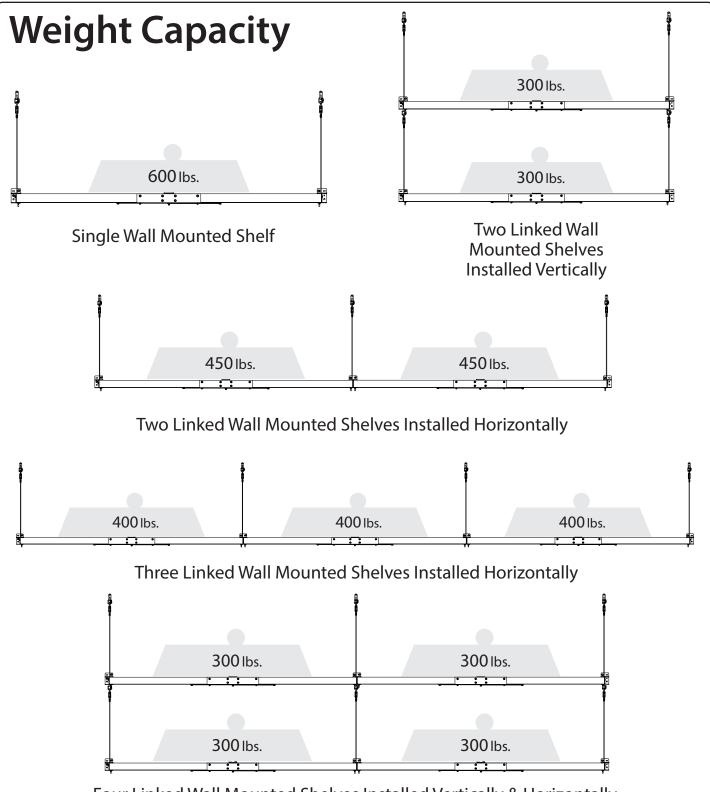


Pulley Cable Cap

#### **SKU 40483**

#### **Hardware Box**

- 1/4-20 x 0.625in Carriage Bolt
- 1/4in Flat Washer
- 1/4-20 Acorn Nut
- 1/4-20 x 0.75in Hex Bolt
- 1/4-20 Lock Nut
- •5/16-18x1.25in Hex Bolt
- 5/16-18 Lock Nut
- 5/16in Flat Washer
- 1/4 x3in Lag Screw
- Concrete Anchors
- Pulley
- Pulley Cable Cap



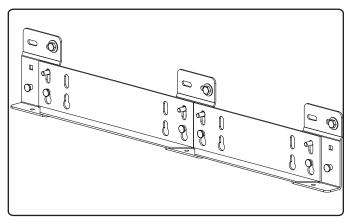
Four Linked Wall Mounted Shelves Installed Vertically & Horizontally

Safety Warning: All Wall Mounted Shelf units have a rated load capacity of 600 pounds, evenly distributed, using 3" Lag Screws anchored into solid wood studs or concrete supports capable of supporting such a load.

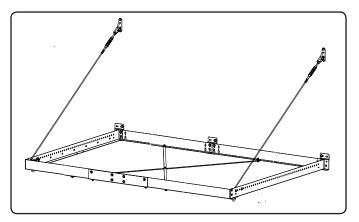
Ensure all weight is distributed evenly on the rack. Place heavier objects near the perimeter frame and cross supports with lighter objects in the center.

### **Wall Mounted Shelf Installation Overview**

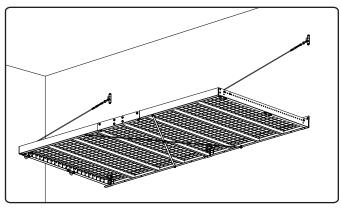
- Determine your preferred configuration before beginning assembly. (Page 10)
  - Wall brackets must be fully secured to studs using 1 lag bolt each or to concrete wall using 1 concrete anchor.
  - Read through the entire instruction manual first before beginning installation.
- Install wall brackets & back perimeter beams onto the wall at a determined height. (Page 13-14)



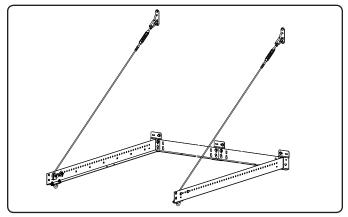
Install the front perimeter beams and angled cross supports. (Page 20-21)



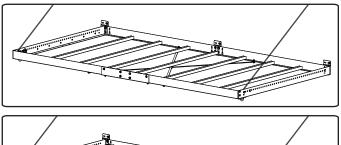
Plan your Wall Mounted Shelf installation location, determine orientation and verify spacing of studs. (Page 11-12)

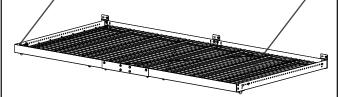


Install the Pad Eye Plate and Side Beams with Cable Assemblies. (Page 15-19)



Place the grid supports followed by the steel grids to complete the Wall Mounted Shelf installation. (Page 21-22)





#### Note

If installing the Wall Mounted Shelf cables to the wall, start on page 11. If installing the Wall Mounted Shelf cables to the ceiling, start on page 12.

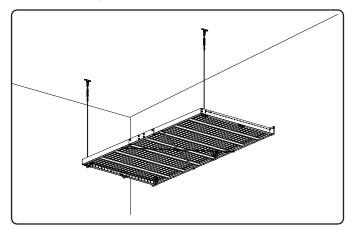
# **Installation options for Wall Mounted Shelf**

- Important information: Please read entire manual before beginning installation.
  - · Layouts shown are examples only.
  - Do not exceed total weight capacity of Wall Mounted Shelf.
  - Plan layout and measure space for clearance and stud spacing before installing.
  - Ensure wall mounted shelf is securely installed to suitable structure.

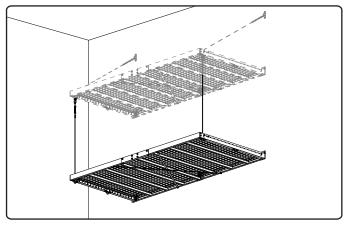
### Option B.

Single Wall Mounted Shelf attached to ceiling. Distance from Ceiling is adjustable from 18in to 57in.

(Start on page 12, Option B)

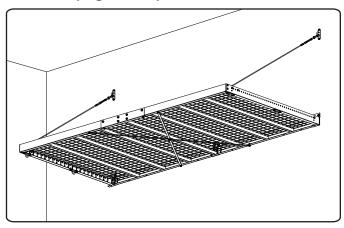


**Option D.**Connecting Wall Mounted Shelves Vertically (Page 28)

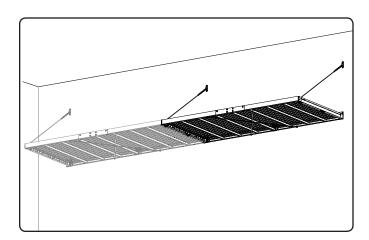


Option A.

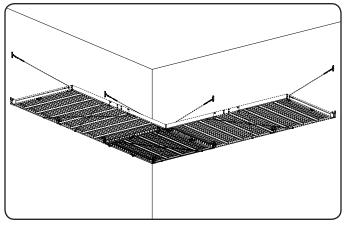
Single Wall Mounted Shelf attached to wall. (Start on page 11, Option A)



**Option C.**Connecting Wall Mounted Shelves Horizontally. (Page 27)



**Option E.**Corner Wall Mounted Shelf (Page 29)



### Plan the Installation Location

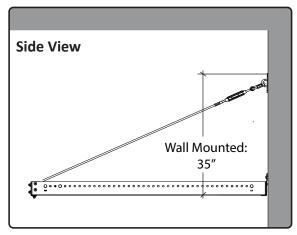
### **Option A: Installing Wall Mounted Shelf To the Wall**



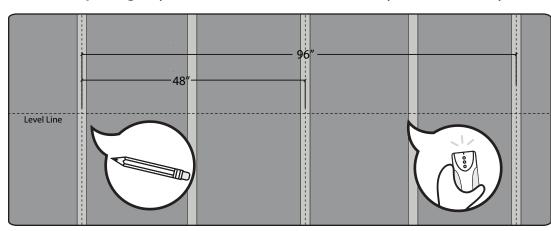
Once it is determined that your Wall Mounted Shelf will be installed to the wall, verify there is sufficient clearance. Mark the desired position of the bottom of the Wall Mounted Shelf with a horizontal level line across the wall.

#### Note:

 Wall mounted configurations require greater than 35" between the ceiling and the bottom of the Wall Mounted Shelf.

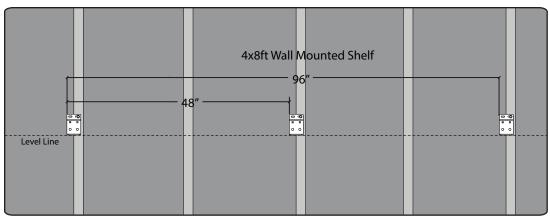


Using a stud finder, locate and mark the center position of the studs on the wall. Check the spacing of your wall studs and ensure they fit the size of your install.



#### Note:

If the spacing of your studs do not align with the install locations, please refer to installing a Wall Brace on page 26



#### Note:

Wall Mounting Brackets should be placed 48in apart center to center.

#### Note:

Skip to page 13 to continue wall Installation.

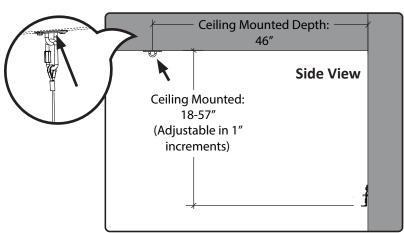
### **Plan Installation Location**

### Option B: Installing Wall Mounted Shelf To the Ceiling

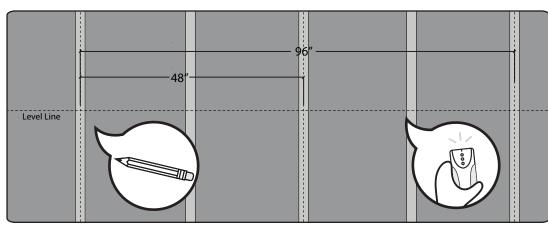
Once it is determined that your Wall Mounted Shelf will be installed to the ceiling, verify there is sufficient closes as Markethanks in the ceiling of the control of the ceiling of the control of the ceiling of the there is sufficient clearance. Mark the desired position of the bottom of the Wall Mounted Shelf with a horizontal level line across the wall.

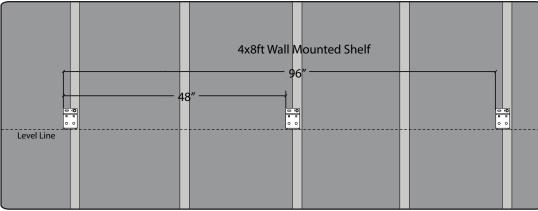
#### Note:

- Ceiling mounted configurations can range from 18-57" (Adjustable in 1" increments)
- The center of the Pad Eye plates mounted to the ceiling should be 46" from the back wall.



Using a stud finder, locate and mark the studs on the wall. Check the spacing of your ceiling joists and ensure they fit the size of your install.





#### Note:

If the construction of your ceiling is using engineered joists, please refer to "Fastening to Engineered Joists" on page 26.

If the spacing of your studs do not align with the install locations, please refer to installing a Wall Brace on page 26

#### Note:

Wall Mounting Brackets should be placed 48in apart center to center.

#### Note:

Continue to page 13 for remaining ceiling installation.

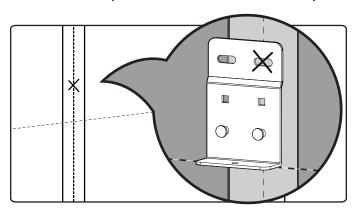
### **Installing Wall Brackets & Back Beam**

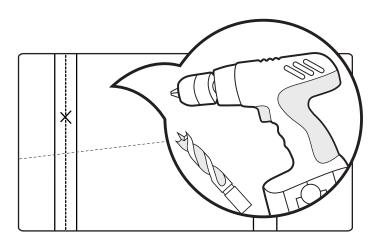
Start installation with the middle hanging bracket.

Align the bottom of the Wall Mounting Bracket (#6) with the bottom level line and the center of the wall stud with the center of the horizontal slot in the mounting bracket (mark the hole to be drilled)

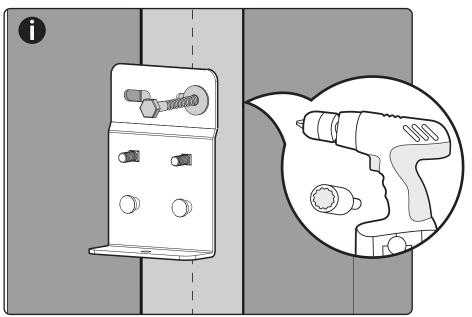


Drill a pilot hole using a 3/16" drill bit. **Note:** Pilot hole must bore into 3 inches of solid wood for lag screw to be fully secured.





8ft Wide Wall Mounted Shelf: Insert two carriage bolts (#8) into the middle wall mounting bracket. Secure wall mounting bracket to stud using one 3in Lag Screw (#24), one 1/4" washer (#9) and 7/16" socket. Note: If connecting 2 or more Wall Mounted Shelves horizontally, refer to pg 27 before installing bracket.





#### Warning:

Make sure the Lag Screws are tight against the stud but DO NOT over-tighten the lag screws.

If lag screws are overtightened, the lag screw could snap or the hole may be stripped.

# Masonry

- Follow steps 1 to 11.
- Drill pilot holes through the marked locations with hammer drill & 5/16" masonry bit.
- Use Concrete Anchor for each pilot hole.

Mark next location for pilot hole using the wall mounting bracket (#6) and rear perimeter beam (#5). Follow steps i through iii below.



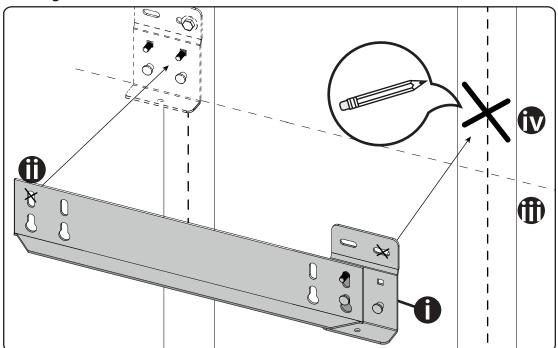
Insert the Wall Mounting Bracket and Carriage Bolt onto the Rear Perimeter Beam.



Mount the Rear Perimeter Beam onto the previously installed Wall Mounting Bracket.



Align the bracket with the level line drawn from step 2.



**W** 

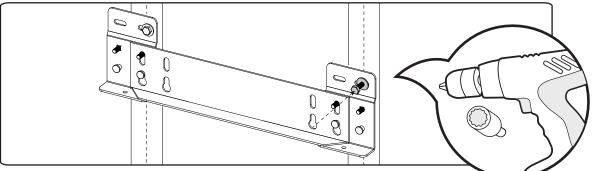
Mark the wall location to be drilled along the center of the stud (as shown above).

Note: If the spacing of your studs do not align with the install locations refer to installing wall brace on Page.26

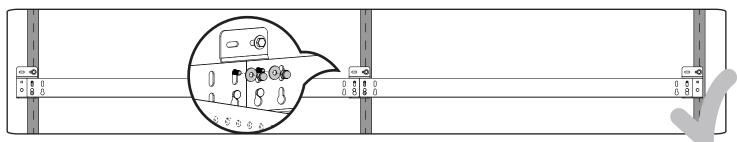
**Note:** Do not install nut onto carriage bolts until step 15.



Drill a 3/16" pilot hole & secure wall mounting bracket into stud using one 3" Lag Screw (#24) one 1/4" washer (#9) and a 7/16" socket. Ensure Carriage Bolt (#8) is mounted before installing bracket.



Repeat steps 6 & 7 for opposite side, or connecting multiple wall mounted shelves horizontally. Bolt the center of the rear perimeter beams to the wall mounting bracket with two 1/4" washers (#9) and two 1/4" acorn nuts (#10).



#### Note:

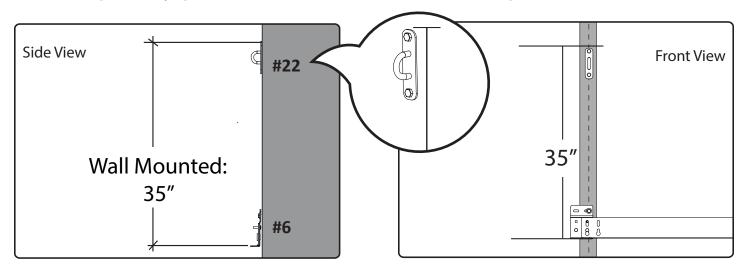
To continue Wall Installation continue to page 15. To Continue Ceiling installation, skip to page 17.

# **Installing Pad Eye Plate**

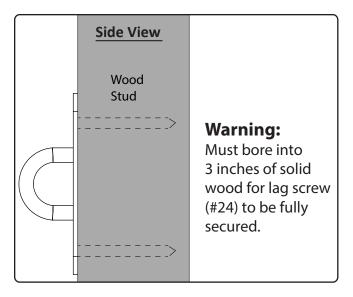
### **Option A: Wall Configuration**

9A

<u>Wall Mounting:</u> Measure and mark 35" vertically from the bottom of the Wall Mounted bracket (#6) to the top of the pad eye plate (#22). Align the pad eye plate on the center of the stud and the top of the eye plate below the level line and mark the wall for pilot holes.

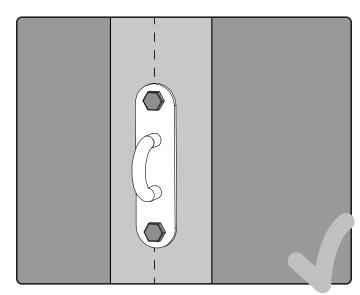


Drill pilot holes into the solid wood using a 3/16" drill bit.





Secure Pad Eye Plate (#22) to the stud or joist using two 3" Lag Screws (#24), and a 7/16" socket.



# **Perimeter Beam & Cable Assembly**

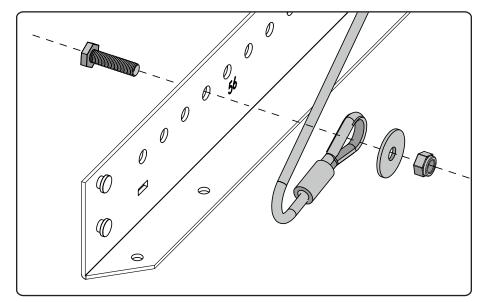
### **Option A: Wall Configuration**



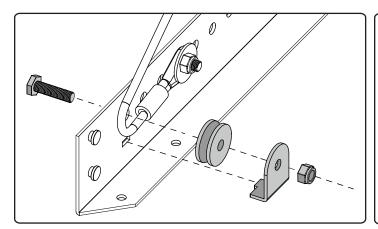
Attach cable eyelet to side beam (#3/#4) using 5/16" bolt (#19), nut (#20) and fender washer (#23)

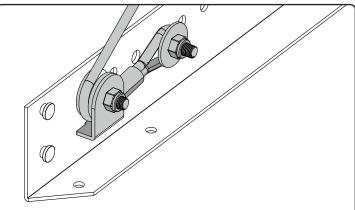
Wall Mounted Cable Assembly:

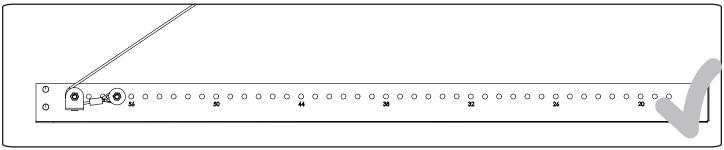
Insert a 5/16" Hex Bolt into the 57th hole of the side perimeter beam.



Insert a 5/16" Hex Bolt (#19) into the Front/First hole of the side perimeter beams. Slide Pully cable cap (#15) onto the Hex Bolt and wrap the Cable Assembly around the pulley (#16). Slide the Pulley Cable Cap onto the Hex Bolt and secure with a 5/16" lock nut (#20). Align tab on Pulley Cable Cap with cutout in side frame.







#### Note:

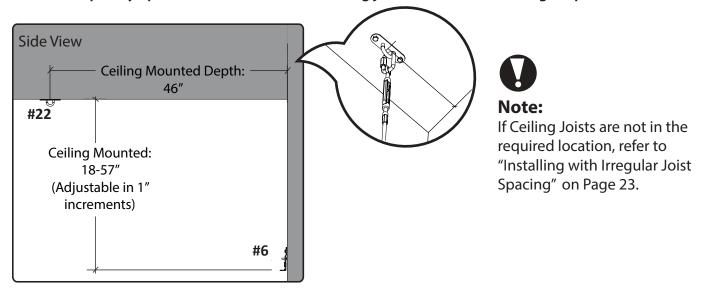
To continue Wall Installation skip to page 19.

# **Installing Pad Eye Plate**

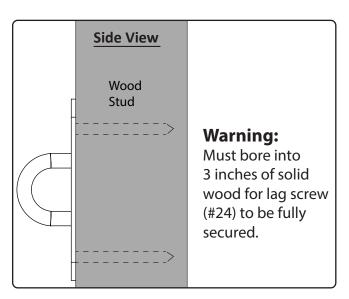
### **Option B: Ceiling Configuration**

9B

<u>Ceiling Mounting:</u> Measure and mark 46" from the wall, in line with the wall mounting bracket (#6) and center of the ceiling joist, this will be the closest eye plate hole (#22) to the wall. Align the pad eye plate on the center of the ceiling joist and mark the ceiling for pilot holes.

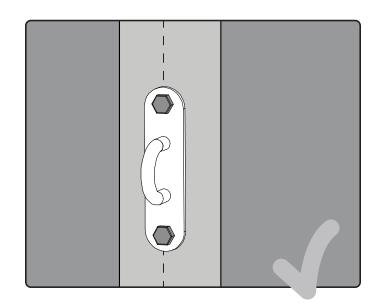


Drill pilot holes into the solid wood using a 3/16" drill bit.



11B

Secure Pad Eye Plate (#22) to the stud or joist using two 3" lag screws (#24), and a 7/16" socket.



# **Perimeter Beam & Cable Assembly**

### **Option B: Ceiling Configuration**

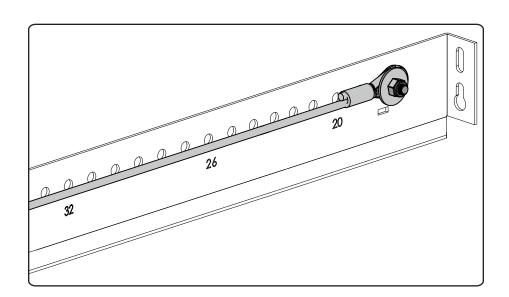


Attach cable eyelet to side beam (#3/#4) using 5/16" bolt (#19), nut (#20) and fender washer (#23)

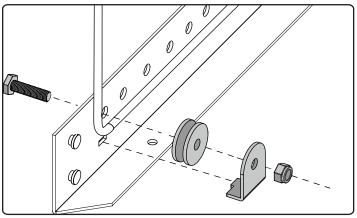
<u>Ceiling Mounted Cable</u> Assembly:

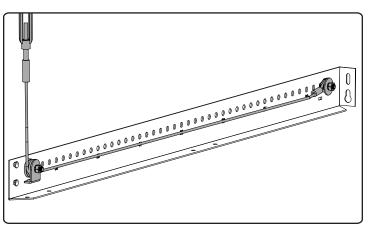
Attach the Cable Eyelet (#21) to the respective hole according to the distance measured from the ceiling to the bottom of the Wall Mounted Shelf.

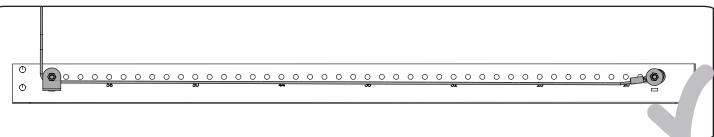
Example shown 18" from ceiling = 18th hole.



Insert a 5/16" Hex Bolt (#19) into the Front/First hole of the side perimeter beams. Slide Pully cable cap (#15) onto the Hex Bolt and wrap the Cable Assembly around the pulley (#16). Slide the Pulley Cable Cap onto the Hex Bolt and secure with a 5/16" lock nut (#20). Align tab on Pulley Cable Cap with cutout in side frame.







#### Note:

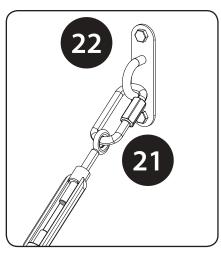
To continue Ceiling installation continue to page 19.

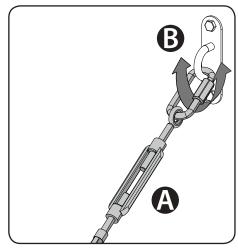
Attach the Quick Link Connector (#21) to the Pad Eye Plate (#22).



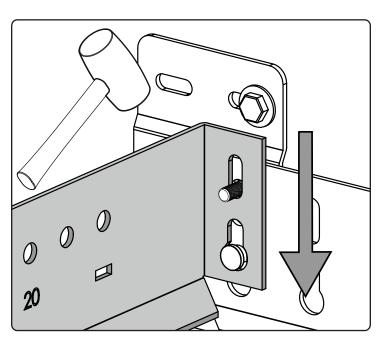
#### **Note:**

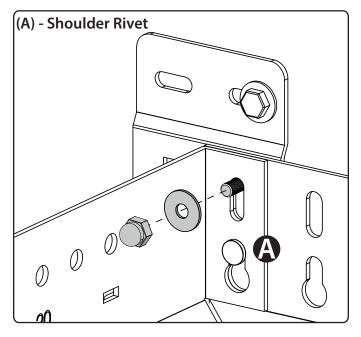
Adjust Turnbuckle (A) of Cable Assembly so threads are even on both sides for easier adjustment when mounting to pad eye plate (B).



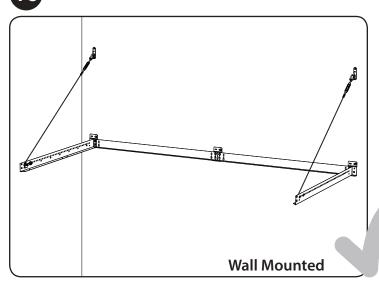


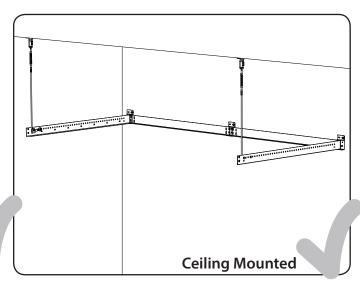
Attach Side Beam( #3/#4) by guiding the mounting holes into the carriage bolt (#8) and shoulder rivet on the wall bracket. Then bolt the side perimeter beam with a 1/4" washer (#9) and 1/4" acorn nut (#10).





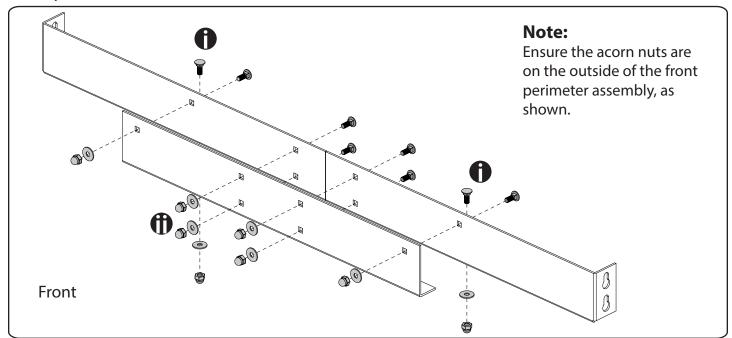
Repeat steps 12-15 for the opposite side.



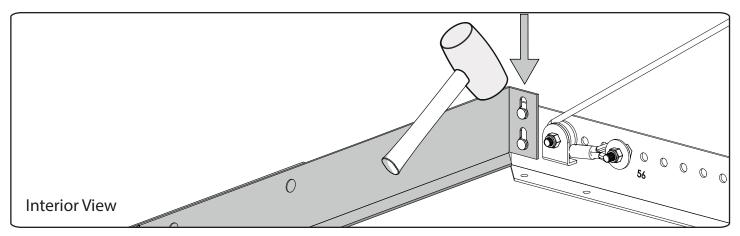


17

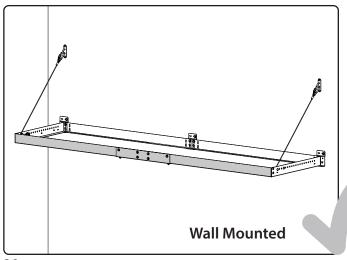
Bolt together the front perimeter beams (#1 / #2) with the front perimeter bracket (#7) with eight 1/4" carriage bolts (#8), washers (#9) and acorn nuts (#10). Begin with the vertical Bolts (i) followed by the horizontal Bolts (ii)

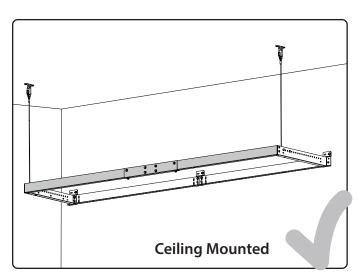


Guide the mounting holes of the front beam into the shoulder rivets on the side perimeter beam. Use a rubber mallet to seat the rivets with the top of the keyholes.



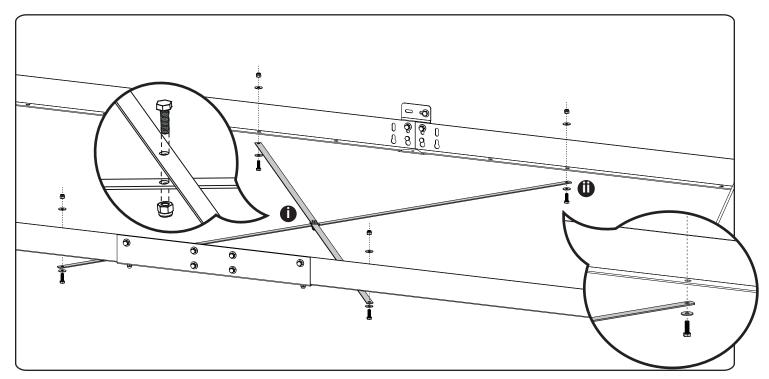
19 Repeat step 18 for the opposite side of the beam





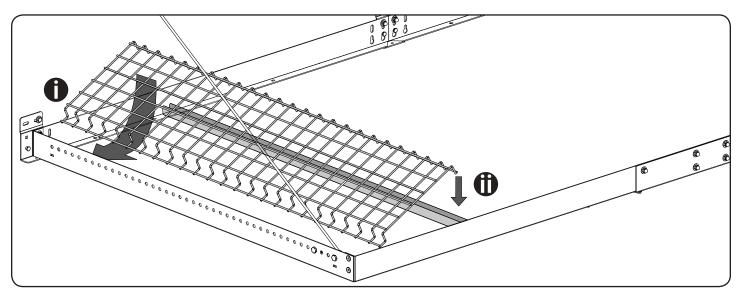
# **4ft Cross Support Assembly**

(i) Assemble the 4ft Cross Supports (#13) with one 1/4" hex bolt (#17) and 1/4" lock nut (#18). (ii) Attach the assembled 4ft cross supports to the perimeter frame with four hex bolts (#17), eight washers (#9), and four lock nuts (#18)



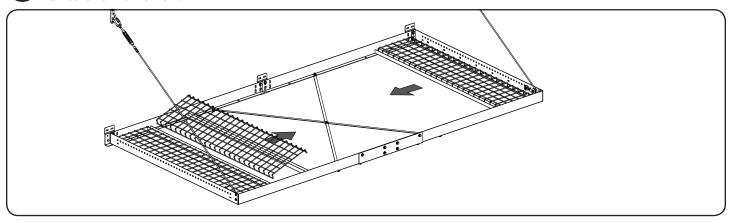
# **Grid Supports & Wire Grids Installation**

(i) Begin at the side ends of the Wall Mounted Shelves and slide the 4ft Finishing Grid Section with bent edges (#11). The bent edges would slide below the installed Pulley & Cables. (ii) Place 4ft "U" Shaped Grid Supports under wire grid (#14).

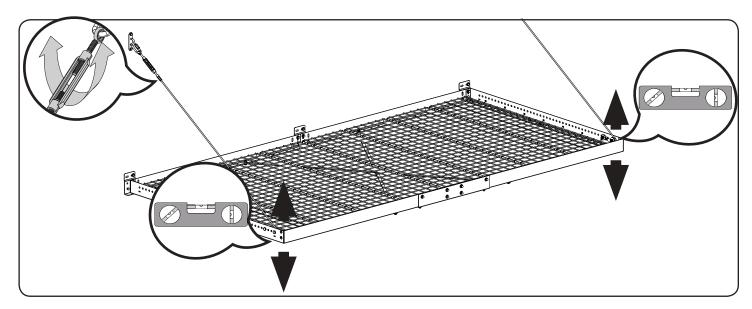


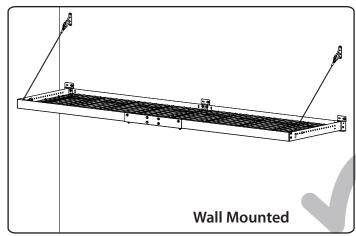


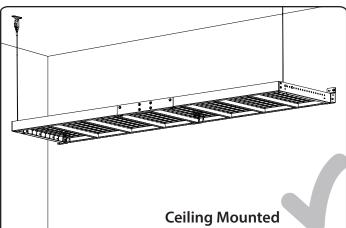
Moving inward, place remaining bottom "U" Shaped Grid Supports and Grid Sections onto the Wall Shelf.



Once the "U" Shaped Grid Supports and Grid Sections have been installed, level the Wall Shelf front to back by adjusting the turnbuckles accordingly.







### Warning:

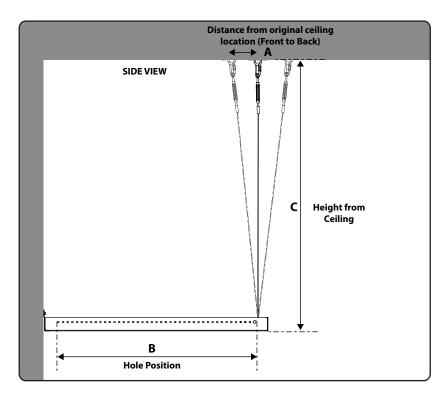
Periodically (at least quarterly) inspect your Wall Mounted Shelf unit to ensure brackets are seated properly and bolts are firmly connected to the studs/joists. If the Wall Mounted Shelf has begun unseating, uninstall the Wall Mounted Shelf and install proper ceiling/wall support.

# **Installation Tips**

### **Installing with Irregular Joist Spacing**

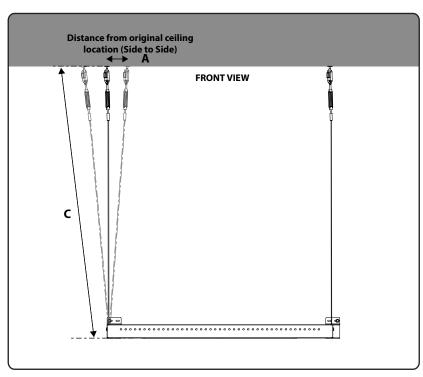


Pad eye plates can be positioned up to 6 inches side to side or 12 inches front to back to align with a ceiling joist. If you are not installing the pad eye plates in the intended location, the height of the shelf needs to be adjusted according to the values in the table on page 24.



Determine the distance of your pad eye plate from the intended original ceiling location (A) and hole position (B).

Look at your corresponding values on page 24 (for A and B) to determine your height from ceiling location (C).

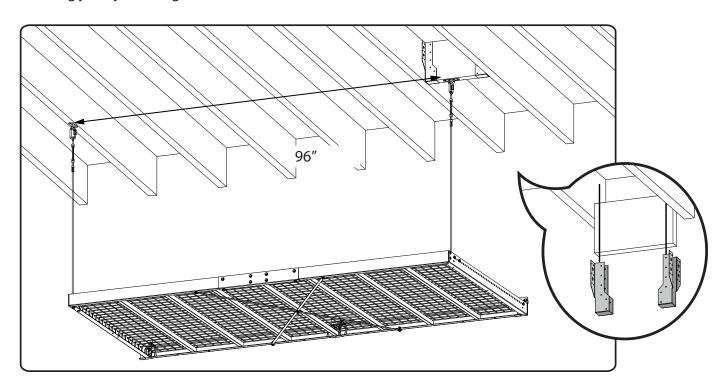


Values found in table below are the distance between the bottom of your wall mounted shelf and the ceiling. (C). Note: Pad eye plate can be positioned up to 6inches side to side or 12 inches front to back.

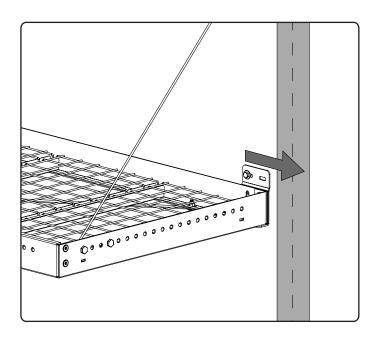
19			Distance from Original Celing Location (Inches) (A)											
18			1	2	3	4	5	6	7	8	9	10	11	12
20   20   197/8   193/4   195/8   193/8   191/8   183/4   183/8   177/8   173/8   163/4   16     21   21   207/8   203/4   205/8   203/8   201/8   193/4   193/8   19   181/2   177/8   171/4     22   22   217/8   213/4   215/8   211/8   207/8   201/2   201/8   195/8   19   181/2     23   23   227/8   223/4   225/8   221/2   221/4   217/8   215/8   211/8   203/4   201/4   195/8     24   24   237/8   233/4   235/8   231/2   231/4   23   225/8   221/4   217/8   213/8   203/4     25   25   247/8   245/8   245/8   241/2   241/4   24   235/8   233/8   227/8   221/2   217/8     26   26   257/8   257/8   253/4   251/2   251/4   25   243/4   243/8   24   231/2   231/8     27   27   267/8   267/8   263/4   261/2   263/8   261/8   253/4   251/2   251/8   245/8   241/8     28   28   277/8   273/4   273/4   271/2   273/8   271/8   275/8   271/8   275/8   271/4   267/8   263/8     29   287/8   287/8   283/4   285/8   283/8   291/8   287/8   285/8   281/4   277/8   275/8   271/4   267/8   263/8     30   30   297/8   297/8   293/4   295/8   293/8   291/8   287/8   285/8   281/4   277/8   275/8   271/4   267/8   263/8     33   33   33   33   327/8   333/4   335/8   331/4		18	18	17 7/8	17 3/4	17 1/2	17 1/4	17	16 5/8	16 1/8	15 5/8	15	14 1/4	13 3/8
21		19	19	18 7/8	18 3/4	18 5/8	18 3/8	18	17 5/8	17 1/4	16 3/4	16 1/8	15 1/2	14 3/4
22 22 217/8 213/4 215/8 213/8 211/8 207/8 201/2 201/8 195/8 19 181/2 21 23 23 227/8 223/4 225/8 221/2 221/4 217/8 115/8 211/8 203/4 201/4 195/8 203/4 255/8 221/4 217/8 213/8 203/4 201/4 215/8 211/8 203/4 201/4 215/8 213/8 203/4 255/8 221/4 217/8 213/8 203/4 255/8 221/4 217/8 213/8 203/4 255/8 221/4 217/8 213/8 203/4 255/8 221/4 217/8 213/8 203/4 255/8 221/4 217/8 213/8 203/4 255/8 257/8 257/8 257/8 255/4 2551/2 251/4 25 243/4 243/4 243/8 24 231/2 231/8 257/8 257/8 257/8 257/8 253/4 251/2 251/4 25 251/8 253/4 251/2 251/8 245/8 241/8 257/7 27 267/8 263/8 263/4 261/2 263/8 261/8 253/4 251/2 251/8 245/8 241/8 29 29 287/8 287/8 2283/4 225/8 283/8 281/8 277/8 275/8 253/4 251/2 253/4 251/2 251/8 265/8 281/8 277/8 273/4 271/2 273/8 291/8 287/8 265/8 281/4 277/8 273/8 271/4 267/8 263/8 30 30 297/8 297/8 293/4 295/8 293/8 291/8 287/8 285/8 281/4 277/8 273/8 271/2 331/3 31 307/8 307/8 303/4 305/8 303/8 301/4 30 295/8 293/8 29 285/8 333/3 33 33 337/8 331/3 315/8 313/4 315/8 313/4 31 303/4 303/8 30 295/8 333/3 33 33 37/8 331/4 335/8 331/2 331/4 33 323/4 331/2 331/4 331/2 331/4 331/2 331/4 331/2 331/4 331/2 331/4 34 34 34 34 337/8 333/4 335/8 331/2 331/4 33 323/4 321/2 321/8 331/4 33 37/8 331/4 335/8 331/2 331/4 33 323/4 321/2 331/4 34 34 34 34 337/8 333/4 335/8 331/2 331/4 33 323/4 321/2 331/4 33 3/8 331/4 33 323/4 335/8 331/2 331/4 33 323/4 331/4 331/4 331/4 34 34 34 34 34 34 34 34 34 35/8 34/4 345/8 341/2 341/4 34 1/8 341/4 34 1/4 41 41 407/8 40 393/4 395/8 391/2 393/8 391/4 39 383/4 335/8 331/4 333/8 331/4 333/8 331/4 333/8 331/4 333/8 331/4 333/8 331/4 333/8 331/4 333/8 331/4 333/8 331/4 333/8 331/4 333/8 331/4 333/4 335/8 331/4 333/4 335/8 331/4 333/8 331/4 333/8 331/4 333/8 331/4 333/8 331/4 333/8 331/4 333/8 331/4 333/4 335/8 331/4 333/4 335/8 331/4 333/4 335/8 331/4 333/4 335/8 331/4 333/4 335/8 331/4 333/4 335/8 331/4 333/4 335/8 333/4 335/8 333/4 335/8 331/4 333/4 335/8 333/4 335/8 333/4 335/8 333/4 335/8 333/4 335/8 333/4 335/8 333/4 335/8 333/4 335/8 333/4 335/8 333/4 335/8 333/4 333/4 335/8 333/4 335/8 333/4 33		20	20	19 7/8	19 3/4	19 5/8	19 3/8	19 1/8	18 3/4	18 3/8	17 7/8	17 3/8	16 3/4	16
23 23 227/8 223/4 225/8 221/2 221/4 217/8 215/8 211/8 203/4 201/4 195/8 24 24 237/8 233/4 225/8 231/2 231/4 23 225/8 221/4 217/8 213/8 203/4 201/4 24 217/8 213/8 203/4 201/4 24 217/8 213/8 203/4 201/4 24 217/8 213/8 203/4 201/4 24 235/8 23/8 221/4 217/8 21/2 217/8 26 26 26 257/8 257/8 253/4 251/2 251/4 25 243/4 243/8 24 231/2 231/8 26 26 26 257/8 267/8 263/4 261/2 263/8 261/8 253/4 251/2 251/8 253/4 251/4 251/2 251/8 253/4 251/4 251/4 267/8 263/8		21	21	20 7/8	20 3/4	20 5/8	20 3/8	20 1/8	19 3/4	19 3/8	19	18 1/2	17 7/8	17 1/4
24 24 23 7/8 23 3/4 23 5/8 23 1/2 23 1/4 23 22 5/8 22 1/4 21 7/8 21 3/8 20 3/4 25 25 25 24 47/8 24 7/8 24 5/8 24 1/2 24 1/4 24 23 5/8 23 3/8 22 7/8 22 1/2 21 1/2 17/8 26 25 25 26 25 7/8 25 7/8 25 3/4 25 1/2 25 1/4 25 26 3/8 26 1/2 26 3/8 26 1/2 25 1/8 24 5/8 24 1/2 23 1/2 28 28 27 7/8 27 7/8 27 3/4 27 1/2 27 3/8 27 1/8 26 7/8 26 1/2 26 1/8 25 3/4 25 1/2 25 1/8 24 5/8 24 1/8 29 29 28 7/8 28 7/8 28 7/8 28 3/4 28 5/8 28 3/8 28 1/8 28 3/4 28 1/2 27 1/8 26 7/8 26 1/2 26 1/8 25 3/4 25 1/2 25 1/8 26 3/8 26 1/8 26 3/8 30 0 29 7/8 29 3/8 29 3/4 29 5/8 29 3/8 29 1/8 28 7/8 28 5/8 28 1/4 27 7/8 27 1/2 33 1/4 31 30 7/8 30 7/8 30 3/4 30 5/8 30 3/8 30 1/4 30 29 5/8 29 3/8 29 28 3/8 33 3 3 3 3 37/8 33 3/4 33 5/8 33 1/2 33 1/4 31 30 3/4 30 3/8 30 1/2 33 1/3 33 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3		22	22	21 7/8	21 3/4	21 5/8	21 3/8	21 1/8	20 7/8	20 1/2	20 1/8	19 5/8	19	18 1/2
25		23	23	22 7/8	22 3/4	22 5/8	22 1/2	22 1/4	21 7/8	21 5/8	21 1/8	20 3/4	20 1/4	19 5/8
26 26 25 7/8 25 7/8 25 3/4 25 1/2 25 1/4 25 24 3/4 24 3/8 24 23 1/2 23 1/8 27 77 267/8 26 7/8 26 3/4 26 1/2 26 3/8 26 1/8 25 3/4 25 1/2 25 1/8 24 5/8 24 1/8 25 27 77 26 7/8 27 7/8 27 7/8 27 7/8 27 7/8 27 7/8 27 3/8 27 1/8 26 7/8 26 1/8 25 3/4 21 1/8 24 5/8 24 1/8 25 27 3/8 27 1/8 26 7/8 26 1/8 25 3/4 25 1/2 25 1/8 25 3/4 25 1/2 25 1/8 26 1/8 25 3/4 25 1/2 25 1/8 26 1/8 25 3/4 25 1/2 26 1/8 25 3/4 25 1/2 26 1/8 25 3/4 25 1/2 26 1/8 25 3/4 25 1/2 26 1/8 25 3/4 25 1/2 26 1/8 25 3/4 25 1/2 26 1/8 25 3/4 25 1/4 26 7/8 26 3/8 30 30 29 5/8 29 3/8 28 3/8 28 1/8 27 7/8 27 5/8 27 1/4 26 7/8 26 3/8 30 30 29 5/8 29 3/8 29 3/8 29 3/8 29 3/8 29 3/8 29 3/8 29 3/8 29 3/8 29 3/8 29 3/8 29 3/8 29 3/8 29 3/8 29 3/8 29 3/8 33 33 33 33 32 7/8 32 3/4 33 5/8 33 1/2 33 1/4 31 1/2 31 1/8 30 3/4 34 34 34 34 33 3/4 33 5/8 33 1/2 33 1/4 31 1/4 31 30 3/4 30 3/8 30 29 5/8 35 35 35 35 34 7/8 34 3/4 34 5/8 34 1/2 34 1/4 34 1/3 33 3/8 33 1/2 33 1/4 32 7/8 35 3/4 35 5/8 35 1/2 35 3/8 35 1/8 34 7/8 34 1/4 34 1/8 34 1/4 34 1/8 34 1/4 34 1/8 34 1/4 34 1/8 34 1/4 34		24	24	23 7/8	23 3/4	23 5/8	23 1/2	23 1/4	23	22 5/8	22 1/4	21 7/8	21 3/8	20 3/4
27 27 267/8 267/8 263/4 261/2 263/8 261/8 253/4 251/2 251/8 245/8 241/8 28 28 277/8 277/8 273/4 271/2 273/8 271/8 267/8 261/2 261/8 253/4 251/4 251/4 267/8 261/2 29 29 287/8 287/8 283/4 285/8 283/8 281/8 277/8 275/8 275/8 281/4 277/8 267/8 263/8 30 30 297/8 297/8 293/4 295/8 293/8 291/8 287/8 285/8 281/4 277/8 271/2 273/8 271/4 267/8 263/8 31 31 31 307/8 307/8 303/4 305/8 303/8 301/4 30 295/8 293/8 299/8 295/8 293/8 291/8 287/8 285/8 281/4 277/8 271/2 253/8 33 33 33 337/8 331/4 315/8 313/4 315/8 313/4 313/8 311/4 31 303/4 303/8 30 295/8 33 33 33 33 327/8 323/4 325/8 321/2 321/4 32 313/4 311/2 311/8 303/8 35 35 35 35 347/8 343/4 345/8 341/2 341/4 341/8 337/8 331/2 331/4 331/4 331/8 311/4 31 303/4 303/8 30 295/8 36 36 36 36 36 367/8 365/8 361/2 363/8 361/8 357/8 347/8 345/8 341/2 341/4 341/8 337/8 331/2 331/4 341/4 341/8 337/8 331/2 331/4 327/8 353/8 351/2 353/8 351/8 347/8 345/8 341/2 341/4 341/8 347/8 345/8 341/2 341/4 341/8 347/8 345/8 341/4 341/8 341/8 341/8 341/4 341/4 341/8 341/8 341/4 341		25	25	24 7/8	24 7/8	24 5/8	24 1/2	24 1/4	24	23 5/8	23 3/8	22 7/8	22 1/2	21 7/8
28 28 277/8 277/8 273/4 271/2 273/8 271/8 267/8 261/2 261/8 253/4 251/4 29 29 287/8 287/8 283/4 285/8 283/8 281/8 277/8 275/8 271/4 267/8 263/8 30 30 297/8 297/8 293/4 295/8 293/8 291/8 287/8 285/8 281/4 277/8 275/8 271/4 267/8 263/8 31 31 30 30/8 30 7/8 305/8 303/4 305/8 301/4 30 295/8 293/8 293/8 29 285/8 32 32 33 317/8 317/8 313/4 315/8 313/8 311/4 31 303/4 303/8 30 295/8 33 33 33 327/8 323/4 325/8 321/2 321/4 32 313/4 311/2 311/8 303/4 305/8 333/4 335/8 331/2 331/4 311/2 311/8 303/4 305/8 331/4 313/4 311/2 311/8 303/4 305/8 331/4 313/4 311/2 311/8 303/4 305/8 331/4 321/2 321/4 32 31/4 311/2 311/8 303/4 305/8 331/4 335/8 331/2 331/4 321/2 321/8 331/4 311/2 311/8 303/4 305/8 355/8 355/8 355/8 351/2 321/4 32 31/4 321/2 321/8 313/4 311/2 311/8 303/4 305/8 36 36 36 36 357/8 353/4 355/8 351/2 341/4 341/8 337/8 331/2 331/4 327/8 36 36 36 36 357/8 353/4 355/8 351/2 341/4 341/8 337/8 331/2 331/4 327/8 38 38 38 377/8 367/8 365/8 361/2 363/8 361/2 363/8 361/2 363/8 365/8 361/2 373/8 373/8 373/4 373/8 371/2 373/8 371/8 367/8 365/8 365/8 361/2 373/8 373/8 373/4 373/8 371/8 367/8 365/8 365/8 361/2 373/8 371/8 367/8 365/8 365/8 361/2 373/8 373/4 373/8 373/4 373/8 371/8 367/8 365/8 365/8 361/2 373/8 373/4 373/8 373/4 373/8 371/8 365/8 365/8 365/8 361/2 373/8 373/4 373/8 373/4 373/8 371/8 365/8 365/8 365/8 361/2 373/8 373/4 373/8 373/4 373/8 371/8 365/8		26	26	25 7/8	25 7/8	25 3/4	25 1/2	25 1/4	25	24 3/4	24 3/8	24	23 1/2	23 1/8
29 29 28 7/8 28 7/8 28 3/8 28 3/4 28 5/8 28 3/8 28 1/8 27 7/8 27 5/8 27 1/4 26 7/8 26 3/8 30 30 29 7/8 29 7/8 29 3/4 29 5/8 29 3/8 29 1/8 28 7/8 28 5/8 28 1/4 27 7/8 27 1/2 31 31 31 30 7/8 30 7/8 31 3/4 31 5/8 31 3/8 31 1/4 31 30 3/4 30 3/8 30 29 5/8 29 3/8 29 28 5/8 32 32 31 17/8 31 17/8 31 3/4 31 5/8 31 3/8 31 1/4 31 30 3/4 30 3/8 30 29 5/8 33 3/8 33 3/8 33 3/8 33 3/8 33 3/8 32 1/2 32 1/4 32 31 3/4 31 1/2 31 1/8 30 3/4 34 34 34 34 34 33 7/8 33 3/4 33 5/8 33 1/2 33 1/4 33 23 3/4 32 1/2 32 1/4 32 31 3/4 31 1/2 31 1/8 30 3/4 33 5/8 35 35 35 35 35 34 7/8 34 3/4 34 5/8 34 1/2 34 1/4 34 1/8 33 7/8 33 1/4 32 7/8 36 3/8 36		27	27	26 7/8	26 7/8	26 3/4	26 1/2	26 3/8	26 1/8	25 3/4	25 1/2	25 1/8	24 5/8	24 1/8
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31         31         30 7/8         30 7/8         30 3/4         30 5/8         30 3/8         30 1/4         30         29 5/8         29 3/8         29         28 5/8           32         32         31 7/8         31 7/8         31 3/4         31 5/8         31 3/8         31 1/4         31         30 3/4         30 3/4         30 3/8         30         29 5/8           33         33         33 17/8         31 3/4         32 5/8         32 1/2         32 1/4         32         31 3/4         31 1/2         31 3/4		29	29	28 7/8	28 7/8	28 3/4	28 5/8	28 3/8	28 1/8	27 7/8	27 5/8	27 1/4	26 7/8	26 3/8
32 32 317/8 317/8 313/4 315/8 313/8 311/4 31 303/4 303/8 30 295/8 33 33 33 33 327/8 323/4 325/8 321/2 321/4 32 313/4 311/2 311/8 303/4 34 34 34 34 34 34 34 34 35/8 331/2 331/4 33 323/4 321/2 321/8 313/4 35 35 35 35 35 347/8 343/4 345/8 341/2 341/4 34 34/8 347/8 345/8 341/4 34 37 37 37 37 367/8 353/4 355/8 351/2 353/8 351/2 353/8 351/8 347/8 345/8 341/4 34 34 34 34 34 34 34 34 34 34 34 34 34		30	30	29 7/8	29 7/8	29 3/4	29 5/8	29 3/8	29 1/8	28 7/8	28 5/8	28 1/4	27 7/8	27 1/2
33 33 33 33 32 7/8 32 3/4 32 5/8 32 1/2 32 1/4 32 31 3/4 31 1/2 31 1/8 30 3/4 34 34 34 34 33 7/8 33 3/4 33 5/8 33 1/2 33 1/4 33 3/4 32 1/2 32 1/8 31 3/4 35 35 35 35 35 34 7/8 34 3/4 34 5/8 34 1/2 34 1/4 34 1/8 33 7/8 33 1/2 33 1/4 32 7/8 36 36 36 36 36 35 7/8 35 3/4 35 5/8 35 1/2 35 3/8 35 1/8 34 7/8 34 5/8 34 1/4 34 3/8 37 3/8 33 1/2 33 1/4 32 7/8 37 37 37 36 7/8 36 3/6 3/6 3/6 3/6 3/6 3/6 3/6 3/6 3/6		31	31	30 7/8	30 7/8	30 3/4	30 5/8	30 3/8	30 1/4	30	29 5/8	29 3/8	29	28 5/8
34         34         34         33 7/8         33 3/4         33 5/8         33 1/2         33 1/4         33         32 3/4         32 1/2         32 1/8         31 3/4           35         35         35         34 7/8         34 3/4         34 5/8         34 1/2         34 1/4         34 1/8         33 7/8         33 1/2         33 1/4         32 7/8           36         36         36 7/8         36 3/4         36 5/8         36 1/2         35 3/8         35 1/8         34 7/8         34 5/8         34 1/4         34           37         37         36 7/8         36 3/4         36 5/8         36 1/2         36 3/8         35 1/8         35 7/8         35 5/8         35 1/3         35 3/8         35 1/8         34 7/8         34 5/8         34 1/4         34           38         38         38 7/8         36 3/4         36 5/8         36 1/2         36 3/8         36 1/8         35 7/8         35 5/8         35 3/8         35           39         39         38 7/8         38 3/4         38 5/8         38 1/2         38 3/8         38 1/8         38 7/8         36 1/8         36 6/8         36 3/8         36 1/8           40         40         40 7/8         <		32	32	31 7/8	31 7/8	31 3/4	31 5/8	31 3/8	31 1/4	31	30 3/4	30 3/8	30	29 5/8
35 35 35 35 347/8 343/4 345/8 341/2 341/4 341/8 337/8 331/2 331/4 327/8  36 36 36 36 36 36 357/8 353/4 355/8 351/2 353/8 351/8 347/8 345/8 341/4 34  37 37 37 37 367/8 363/4 365/8 361/2 363/8 361/8 357/8 355/8 353/8 35  38 38 38 377/8 373/4 375/8 371/2 373/8 371/8 367/8 365/8 363/8 36  39 39 39 39 387/8 383/4 385/8 381/2 383/8 381/8 38 373/4 373/8 371/8  40 40 40 397/8 393/4 395/8 391/2 393/8 391/4 39 383/4 381/2 381/8  41 41 41 41 407/8 403/4 403/4 401/2 393/8 391/4 40 393/4 391/2 391/4  42 42 42 417/8 413/4 413/4 415/8 413/8 411/4 41 403/4 401/2 401/4  43 43 43 43 427/8 427/8 423/4 425/8 423/8 421/4 42 417/8 415/8 411/4  44 44 44 44 437/8 437/8 433/4 435/8 431/2 431/4 431/8 437/8 435/8 433/8  45 45 45 45 467/8 467/8 463/4 465/8 461/2 461/2 451/4 451/8 447/8 445/8 443/8  46 46 46 467/8 467/8 463/4 465/8 461/2 451/4 451/8 477/8 4		33	33		32 7/8	32 3/4	32 5/8	32 1/2	32 1/4	32	31 3/4	31 1/2	31 1/8	30 3/4
38         38         37/8         37/8         37/8         37/8         37/8         37/8         36/8         36/8         36/8         36/8         38 3/8         38 1/2         38 3/8         38 1/8         38         37 3/4         37 3/8         37 1/8           39         39         38 7/8         38 3/4         38 5/8         38 1/2         38 3/8         38 1/8         38         37 3/4         37 3/8         37 1/8           40         40         40         39 7/8         39 3/4         39 5/8         39 1/2         39 3/8         39 1/4         39 3/8         38 1/4         38 3/4         38 1/2         38 1/8           41         41         40         40 7/8         40 3/4         40 1/2         40 3/8         40 1/4         40         39 3/4         39 1/2 <t< th=""><th></th><th>34</th><th>34</th><th>34</th><th>33 7/8</th><th>33 3/4</th><th>33 5/8</th><th>33 1/2</th><th>33 1/4</th><th>33</th><th>32 3/4</th><th>32 1/2</th><th>32 1/8</th><th>31 3/4</th></t<>		34	34	34	33 7/8	33 3/4	33 5/8	33 1/2	33 1/4	33	32 3/4	32 1/2	32 1/8	31 3/4
38         38         37/8         37/8         37/8         37/8         37/8         37/8         36/8         36/8         36/8         36/8         38 3/8         38 1/2         38 3/8         38 1/8         38         37 3/4         37 3/8         37 1/8           39         39         38 7/8         38 3/4         38 5/8         38 1/2         38 3/8         38 1/8         38         37 3/4         37 3/8         37 1/8           40         40         40         39 7/8         39 3/4         39 5/8         39 1/2         39 3/8         39 1/4         39 3/8         38 1/4         38 3/4         38 1/2         38 1/8           41         41         40         40 7/8         40 3/4         40 1/2         40 3/8         40 1/4         40         39 3/4         39 1/2 <t< th=""><th><u>ا</u> ھ</th><th>35</th><th>35</th><th>35</th><th>34 7/8</th><th>34 3/4</th><th>34 5/8</th><th>34 1/2</th><th>34 1/4</th><th>34 1/8</th><th>33 7/8</th><th>33 1/2</th><th>33 1/4</th><th>32 7/8</th></t<>	<u>ا</u> ھ	35	35	35	34 7/8	34 3/4	34 5/8	34 1/2	34 1/4	34 1/8	33 7/8	33 1/2	33 1/4	32 7/8
38         38         38         37/8         37/8         37/8         37/8         37/8         37/8         36/8         36/8         36/8         36/8         38 3/4         38 5/8         38 1/2         37 3/8         37 1/8         37 3/8         37 1/8         37 3/8         37 1/8         37 3/8         37 1/8         37 3/8         37 1/8         37 1/8         38 1/8         38         37 3/4         37 3/8         37 1/8         37 1/8         38 1/8         38         37 3/4         37 3/8         37 1/8         37 1/8         37 1/8         38 1/2         38 1/8         38 1/8         38 1/8         38 1/8         38 1/2         38 1/8         38 1/8         38 1/2         38 1/8         38 1/2         38 1/8         38 1/2         38 1/8         38 1/2         38 1/8         38 1/2         38 1/8         38 1/2         38 1/8         38 1/2         38 1/8         38 1/2 <th< th=""><th>흲</th><th>36</th><th>36</th><th>36</th><th>35 7/8</th><th>35 3/4</th><th>35 5/8</th><th>35 1/2</th><th>35 3/8</th><th>35 1/8</th><th>34 7/8</th><th>34 5/8</th><th>34 1/4</th><th>34</th></th<>	흲	36	36	36	35 7/8	35 3/4	35 5/8	35 1/2	35 3/8	35 1/8	34 7/8	34 5/8	34 1/4	34
38         38         38         37/8         37/8         37/8         37/8         37/8         37/8         36/8         36/8         36/8         36/8         38 3/4         38 5/8         38 1/2         37 3/8         37 1/8         37 3/8         37 1/8         37 3/8         37 1/8         37 3/8         37 1/8         37 3/8         37 1/8         37 1/8         38 1/8         38         37 3/4         37 3/8         37 1/8         37 1/8         38 1/8         38         37 3/4         37 3/8         37 1/8         37 1/8         37 1/8         38 1/2         38 1/8         38 1/8         38 1/8         38 1/8         38 1/2         38 1/8         38 1/8         38 1/2         38 1/8         38 1/2         38 1/8         38 1/2         38 1/8         38 1/2         38 1/8         38 1/2         38 1/8         38 1/2         38 1/8         38 1/2         38 1/8         38 1/2 <th< th=""><th>iso</th><th>37</th><th></th><th></th><th>36 7/8</th><th></th><th></th><th>36 1/2</th><th>36 3/8</th><th>36 1/8</th><th>35 7/8</th><th>35 5/8</th><th>35 3/8</th><th></th></th<>	iso	37			36 7/8			36 1/2	36 3/8	36 1/8	35 7/8	35 5/8	35 3/8	
40         40         40         39 7/8         39 3/4         39 5/8         39 1/2         39 3/8         39 1/4         39         38 3/4         38 1/2         38 1/8           41         41         41         40 7/8         40 3/4         40 3/4         40 1/2         40 3/8         40 1/4         40         39 3/4         39 1/2         39 1/4           42         42         42         41 7/8         41 3/4         41 5/8         41 3/8         41 1/4         41         40 3/4         40 1/2         40 1/4           43         43         42 7/8         42 7/8         42 3/4         42 5/8         42 3/8         42 1/4         42         41 7/8         41 5/8         41 1/4           44         44         44         43 7/8         43 7/8         43 3/4         43 5/8         43 1/2         43 1/4         43 1/8         42 7/8         42 5/8         42 3/8           45         45         44 7/8         44 7/8         44 3/4         44 5/8         44 1/2         44 1/4         44 1/8         43 7/8         43 5/8         43 3/8           46         46         46 7/8         46 7/8         46 3/4         46 5/8         45 1/2         45 1/4         45 1/	<u>е</u>		38	38		-		37 1/2	37 3/8	37 1/8	36 7/8	36 5/8	36 3/8	36
41         41         40 7/8         40 3/4         40 3/4         40 1/2         40 3/8         40 1/4         40         39 3/4         39 1/2         39 1/4           42         42         42         41 7/8         41 3/4         41 5/8         41 3/8         41 1/4         41         40 3/4         40 1/2         40 1/4           43         43         42 7/8         42 7/8         42 3/4         42 5/8         42 3/8         42 1/4         42         41 7/8         41 5/8         41 1/4           44         44         44         43 7/8         43 7/8         43 3/4         43 5/8         43 1/2         43 1/4         43 1/8         42 7/8         42 5/8         42 3/8           45         45         44 7/8         44 7/8         44 3/4         44 5/8         44 1/2         44 1/4         44 1/8         43 7/8         43 5/8         43 1/2         43 1/4         43 1/8         42 7/8         42 5/8         42 3/8           45         45         44 7/8         44 7/8         44 3/4         44 5/8         44 1/2         44 1/4         44 1/8         43 7/8         43 3/8           46         46         45 7/8         45 7/8         45 3/4         45 5/8	운	39	39	39		38 3/4				38 1/8	38			37 1/8
42         42         41 7/8         41 3/4         41 3/4         41 5/8         41 3/8         41 1/4         41         40 3/4         40 1/2         40 1/4           43         43         42 7/8         42 7/8         42 3/4         42 5/8         42 3/8         42 1/4         42         41 7/8         41 5/8         41 1/4           44         44         44         43 7/8         43 7/8         43 3/4         43 5/8         43 1/2         43 1/4         43 1/8         42 7/8         42 5/8         42 3/8           45         45         45         44 7/8         44 7/8         44 3/4         44 5/8         44 1/2         44 1/4         44 1/8         43 7/8         43 5/8         43 3/8           46         46         46         45 7/8         45 7/8         45 3/4         45 5/8         45 1/2         45 1/4         45 1/8         44 7/8         44 5/8         43 3/8           47         47         47         46 7/8         46 7/8         46 3/4         46 5/8         46 1/2         46 3/8         46 1/8         45 7/8         45 3/4         45 1/2           48         48         47 7/8         47 7/8         47 5/8         47 5/8         47 1/2         <						-		39 1/2		39 1/4			38 1/2	38 1/8
43         43         42 7/8         42 7/8         42 3/4         42 5/8         42 3/8         42 1/4         42         41 7/8         41 5/8         41 1/4           44         44         44         43 7/8         43 7/8         43 3/4         43 5/8         43 1/2         43 1/4         43 1/8         42 7/8         42 5/8         42 3/8           45         45         45         44 7/8         44 7/8         44 3/4         44 5/8         44 1/2         44 1/4         44 1/8         43 7/8         43 5/8         43 3/8           46         46         46         45 7/8         45 7/8         45 3/4         45 5/8         45 1/2         45 1/4         45 1/8         44 7/8         44 5/8         44 3/8           47         47         47         46 7/8         46 7/8         46 3/4         46 5/8         46 1/2         46 3/8         46 1/8         45 7/8         45 3/4         45 1/2           48         48         48         47 7/8         47 7/8         47 3/4         47 5/8         47 1/2         47 3/8         47 1/8         47 3/4         46 1/2           49         49         49         48 7/8         48 3/4         48 5/8         48 1/2         4										•				
44         44         43 7/8         43 7/8         43 3/4         43 5/8         43 1/2         43 1/4         43 1/8         42 7/8         42 5/8         42 3/8           45         45         45         44 7/8         44 7/8         44 3/4         44 5/8         44 1/2         44 1/4         44 1/8         43 7/8         43 5/8         43 3/8           46         46         46         45 7/8         45 7/8         45 3/4         45 5/8         45 1/2         45 1/4         45 1/8         44 7/8         44 5/8         44 3/8           47         47         46 7/8         46 7/8         46 3/4         46 5/8         46 1/2         46 3/8         46 1/8         45 7/8         45 3/4         45 1/2           48         48         47 7/8         47 7/8         47 3/4         47 5/8         47 1/2         47 3/8         47 1/8         47 3/4         46 1/2           49         49         48 7/8         48 7/8         48 3/4         48 5/8         48 1/2         48 3/8         48 1/8         48         47 3/4         47 1/2           50         50         50 7/8         50 7/8         50 3/4         50 5/8         50 1/2         50 3/8         50 1/4         50										-				-
45         45         44 7/8         44 7/8         44 3/4         44 5/8         44 1/2         44 1/4         44 1/8         43 7/8         43 5/8         43 3/8           46         46         46         45 7/8         45 7/8         45 3/4         45 5/8         45 1/2         45 1/4         45 1/8         44 7/8         44 5/8         44 3/8           47         47         46 7/8         46 7/8         46 5/8         46 1/2         46 3/8         46 1/8         45 7/8         45 3/4         45 1/2           48         48         47 7/8         47 7/8         47 3/4         47 5/8         47 1/2         47 3/8         47 1/8         47 47 46 3/4         46 1/2           49         49         48 7/8         48 7/8         48 3/4         48 5/8         48 1/2         48 3/8         48 1/8         48         47 3/4         47 1/2           50         50         50         49 7/8         49 3/4         49 5/8         49 1/2         49 3/8         49 1/8         49         48 3/4         48 1/2           51         51         50 7/8         50 7/8         50 3/4         50 5/8         50 1/2         50 3/8         50 1/4         50         49 3/4         49 5/8		-							-					
46         46         45 7/8         45 7/8         45 3/4         45 5/8         45 1/2         45 1/4         45 1/8         44 7/8         44 5/8         44 3/8           47         47         46 7/8         46 7/8         46 3/4         46 5/8         46 1/2         46 3/8         46 1/8         45 7/8         45 3/4         45 1/2           48         48         47 7/8         47 7/8         47 3/4         47 5/8         47 1/2         47 3/8         47 1/8         47 47         46 3/4         46 1/2           49         49         48 7/8         48 7/8         48 3/4         48 5/8         48 1/2         48 3/8         48 1/8         48         47 3/4         47 1/2           50         50         50         49 7/8         49 3/4         49 5/8         49 1/2         49 3/8         49 1/8         49         48 3/4         48 1/2           51         51         50 7/8         50 7/8         50 3/4         50 5/8         50 1/2         50 3/8         50 1/4         50         49 3/4         49 5/8           52         52         52         51 7/8         51 7/8         51 3/4         51 5/8         51 1/2         51 3/8         51 1/4         51 <t< th=""><th></th><th>-</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>-</th><th></th><th></th><th></th></t<>		-									-			
47         47         46 7/8         46 7/8         46 3/4         46 5/8         46 1/2         46 3/8         46 1/8         45 7/8         45 3/4         45 1/2           48         48         48         47 7/8         47 7/8         47 3/4         47 5/8         47 1/2         47 3/8         47 1/8         47         46 3/4         46 1/2           49         49         49         48 7/8         48 7/8         48 3/4         48 5/8         48 1/2         48 3/8         48 1/8         48         47 3/4         47 1/2           50         50         50         49 7/8         49 3/4         49 5/8         49 1/2         49 3/8         49 1/8         49         48 3/4         48 1/2           51         51         50 7/8         50 7/8         50 3/4         50 5/8         50 1/2         50 3/8         50 1/4         50         49 3/4         49 5/8           52         52         51 7/8         51 7/8         51 3/4         51 5/8         51 1/2         51 3/8         51 1/4         51         50 7/8         50 5/8           53         53         52 7/8         52 7/8         52 3/4         52 5/8         52 1/2         52 3/8         52 1/4         52 <th></th> <th>-</th> <th></th>		-												
48         48         48         47 7/8         47 7/8         47 3/4         47 5/8         47 1/2         47 3/8         47 1/8         47         46 3/4         46 1/2           49         49         49         48 7/8         48 7/8         48 3/4         48 5/8         48 1/2         48 3/8         48 1/8         48         47 3/4         47 1/2           50         50         50         49 7/8         49 7/8         49 3/4         49 5/8         49 1/2         49 3/8         49 1/8         49         48 3/4         48 1/2           51         51         50 7/8         50 7/8         50 3/4         50 5/8         50 1/2         50 3/8         50 1/4         50         49 3/4         49 5/8           52         52         52         51 7/8         51 7/8         51 3/4         51 5/8         51 1/2         51 3/8         51 1/4         51         50 7/8         50 5/8           53         53         52 7/8         52 7/8         52 3/4         52 5/8         52 1/2         52 3/8         52 1/4         52         51 7/8         51 5/8           54         54         54 7/8         54 7/8         54 3/4         54 5/8         53 1/2         53 3/8						-					1	_	-	
49         49         48 7/8         48 7/8         48 3/4         48 5/8         48 1/2         48 3/8         48 1/8         48         47 3/4         47 1/2           50         50         50         49 7/8         49 7/8         49 3/4         49 5/8         49 1/2         49 3/8         49 1/8         49         48 3/4         48 1/2           51         51         50 7/8         50 7/8         50 3/4         50 5/8         50 1/2         50 3/8         50 1/4         50         49 3/4         49 5/8           52         52         52         51 7/8         51 7/8         51 3/4         51 5/8         51 1/2         51 3/8         51 1/4         51         50 7/8         50 5/8           53         53         52 7/8         52 7/8         52 3/4         52 5/8         52 1/2         52 3/8         52 1/4         52         51 7/8         51 5/8           54         54         53 7/8         53 7/8         53 3/4         53 5/8         53 1/2         53 3/8         53 1/4         53 1/8         52 7/8         52 5/8           55         55         54 7/8         54 7/8         54 3/4         54 5/8         54 1/2         54 3/8         54 1/4         5		-								•	•	•	•	
50         50         50         49 7/8         49 7/8         49 3/4         49 5/8         49 1/2         49 3/8         49 1/8         49         48 3/4         48 1/2           51         51         50 7/8         50 7/8         50 3/4         50 5/8         50 1/2         50 3/8         50 1/4         50         49 3/4         49 5/8           52         52         52         51 7/8         51 7/8         51 3/4         51 5/8         51 1/2         51 3/8         51 1/4         51         50 7/8         50 5/8           53         53         52 7/8         52 7/8         52 3/4         52 5/8         52 1/2         52 3/8         52 1/4         52         51 7/8         51 5/8           54         54         54         53 7/8         53 7/8         53 3/4         53 5/8         53 1/2         53 3/8         53 1/4         53 1/8         52 7/8         52 5/8           55         55         54 7/8         54 7/8         54 3/4         54 5/8         54 1/2         54 3/8         54 1/4         54 1/8         53 7/8         53 5/8           56         56         56         55 7/8         55 7/8         55 5/8         55 1/2         55 3/8         55 1/														
51         51         51         50 7/8         50 7/8         50 3/4         50 5/8         50 1/2         50 3/8         50 1/4         50         49 3/4         49 5/8           52         52         52         51 7/8         51 7/8         51 3/4         51 5/8         51 1/2         51 3/8         51 1/4         51         50 7/8         50 5/8           53         53         52 7/8         52 7/8         52 3/4         52 5/8         52 1/2         52 3/8         52 1/4         52         51 7/8         51 5/8           54         54         54         53 7/8         53 7/8         53 3/4         53 5/8         53 1/2         53 3/8         53 1/4         53 1/8         52 7/8         52 5/8           55         55         54 7/8         54 7/8         54 3/4         54 5/8         54 1/2         54 3/8         54 1/4         54 1/8         53 7/8         53 5/8           56         56         56         55 7/8         55 7/8         55 5/8         55 1/2         55 3/8         55 1/4         55 1/8         54 7/8         54 3/4														
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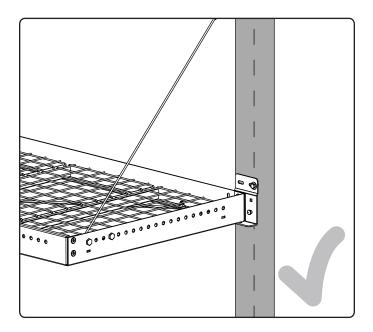
B If the spacing of your ceiling joists do not match the desired size and direction of your Wall Mounted Shelf installation you will need to install a joist in the correct position. Please consult your local professional contractor for assistance installing a joist hanger.

Using suitable joist hangers, install two additional wooden ceiling joists in the desired location. (ceiling joist, joist hanger and hardware not included)



Adjust your back wall mounting brackets left or right to align with the wall studs.

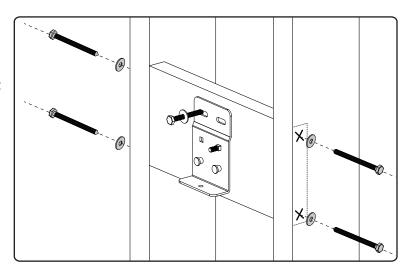




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If the spacing of your wall studs do not match the desired size and direction of your Wall Mounted Shelf installation, you will need to install a horizontal support brace in the correct position (minimum 2" x 8").

Install an additional horizontal support brace in the required locations for your wall mounting depending on the Wall Mounted Shelf and orientation as determined on page 10 (ceiling joist and hardware not included)



### **Fastening to Engineered Joists**

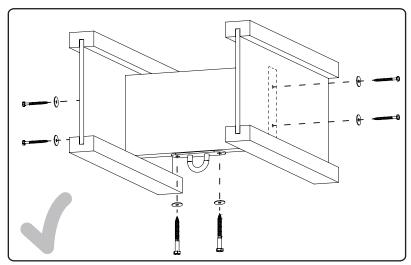


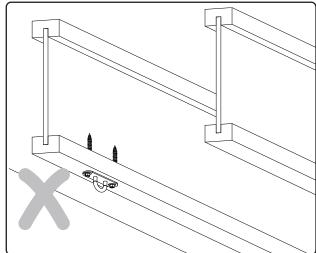
#### Warning:

Engineered ceiling joists are not suitable for directly fastening the ceiling mounting angles to.

If the construction of your ceiling is using engineered ceiling joists you must install an additional ceiling joist (minimum 2" x 8") perpendicular between two of the engineered ceiling joists.

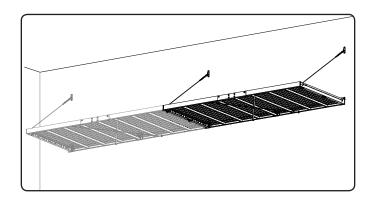
Install two additional wooden ceiling joists in the required locations for your ceiling mounting angles depending on the Wall Mounted Shelf size and orientation as determined on page 10 (ceiling joist and hardware not included)

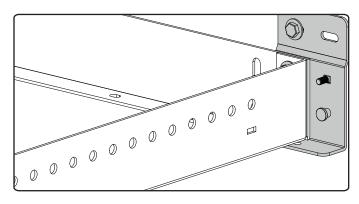




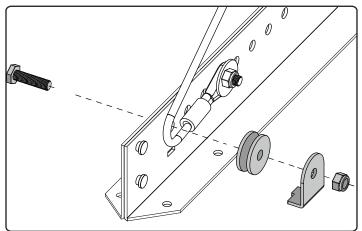
### **Connecting Wall Mounted Shelves Horizontally**

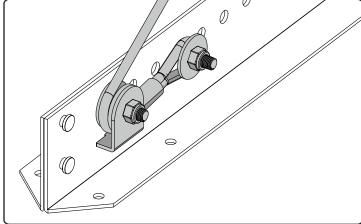
- 1 Install first wall shelf according to option A (Wall Mounted) or B (Ceiling Mounted), until reaching Step 12 on page 16 or page 18.
- Note: Before installing the Wall Mounting Brackets, ensure wall mounted bracket will be shared between two shelves that both carriage bolts are mounted where there will be two Wall Mounted Shelves connected.





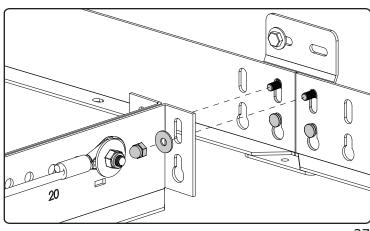
Insert a 5/16" Hex Bolt into the Front/First hole of the side perimeter beams. Slide Pully cable cap onto the Hex Bolt and wrap the Cable Assembly around the pulley. Slide the Pulley Cable Cap onto the Hex Bolt and secure with a 5/16" lock nut. Align tab on Pulley Cable Cap with cutout in side frame.





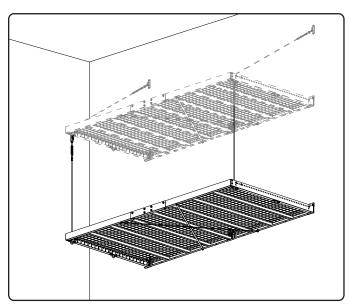
**Note:** Only one cable assembly is required for each pair of side perimeter beams.

- Attach Side Beams by guiding the mounting holes into the carriage bolts and shoulder rivets on the wall bracket. Then bolt the side perimeter beams with a 1/4" washer and 1/4" acorn nut.
- Once the connecting side beams have been installed, continue installation with step 17 on page 20.



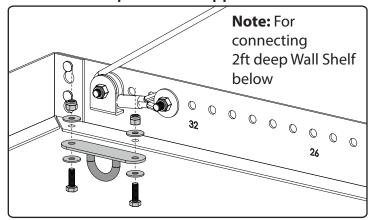
## **Connecting Wall Mounted Shelf Vertically**

1 Fully Install upper wall shelf according to option A (Wall Mounted) or B (Ceiling Mounted). Start installing lower wall shelf up until Step 8 on Page.14

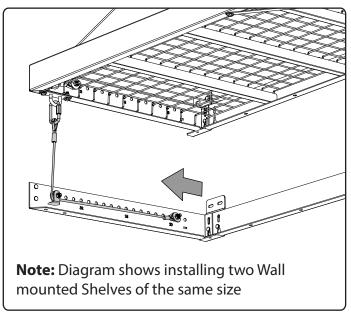


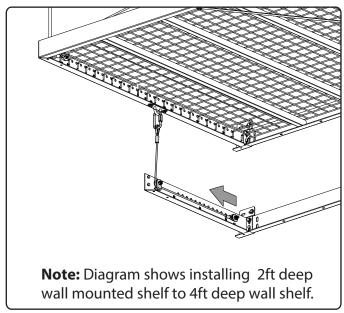
Once you have followed steps 1 to 8 for the lower wall shelf, install the pad eye plates on your upper wall shelf according to diagram below. You may need to remove the end grids to access the mounting holes.

Using two 1/4" hex bolts, four 1/4" washers and two 1/4" lock nuts, bolt a pad eye plate to the mounting holes furthest away from the wall. Repeat to the opposite side.



Continue assembly of the lower Wall Mounted Shelf by following the Ceiling Mounted Option (Option B) throughout the install guide. Install back hanging brackets on the same stud as above Wall Mounted Shelf.



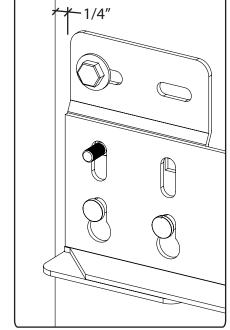


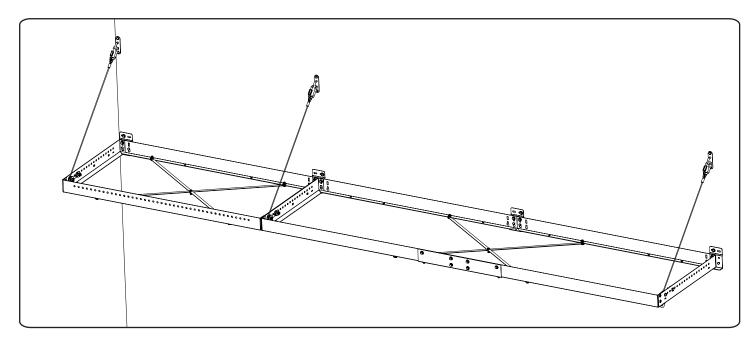
- Complete the Cable Assembly by installing the Cable Eyelet according to the distance measured from the bottom of the upper Wall Mounted Shelf to the bottom of the lower Wall Mounted Shelf. (Similar to step 9b pg.17)
- 5 Continue assembly according to Wall Mounted Shelf installation instructions, resuming on step 12.

# **Connecting Corner Wall Mounted Shelf**

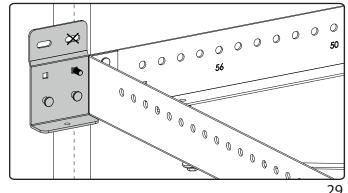
**Note:** If installing two 4ftx8ft and one 4ftx4ft Wall Mounted Shelves in an L configuration, follow instructions starting on 1B of this page:

- Begin installing the 4ftx4ft Wall Mounted Shelf by following the instructions below.
- If you are only installing Wall Mounted Shelves in one direction, follow the instructions on page 27 - "Connecting Wall Mounted Shelves Horizontally",
- Once the location of the Wall Mounted Shelf has been decided, install the Wall Mounting Bracket of the 4ftx4ft Wall Mounted Shelf a 1/4" off the wall following the instructions on page 13 -"Installing Wall Brackets and Back Beam."
- Continue with the assembly following instructions on page 27 -"Connecting Wall Mounted Shelves Horizontally."



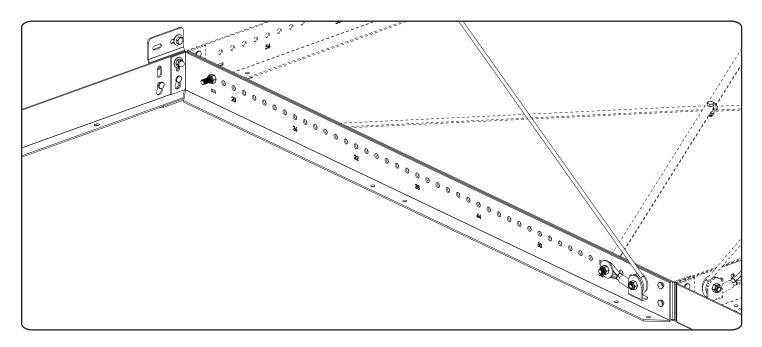


Align the side of the Wall Mounting Bracket of the next 2ftx8ft Wall Mounted Shelf with the Front Perimeter Beam of the 4ftx4ft Wall Mounted Shelf. Mark, drill a pilot hole and install accordingly.



4

Attach the Rear Perimeter Beam followed by the Side Perimeter Beam. Bolt together the 4ftx4ft Wall Mounted Shelf Front Perimeter Beam with the Side Perimeter Beam of the next Wall Mounted Shelf using one hex bolt and lock nut. Attach the Cable Assembly through both Perimeter Beams.



Proceed and complete the assembly of the second Wall Mounted Shelf beginning on Step 3 (pg.13) of the Installation Manual.

#### Thank you for purchasing a NewAge Product!

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